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Dr. John Agwunobi, M.D., P.P.H., M.B.A.
Assistant Secretary for Health
U.S. Department of Health and Human Services
Room 434E
200 Independence Avenue S.W.
Washington, DC 20201

Attention: Personalized Health Care RFI

Dear Dr. Agwunobi:

Accenture is pleased to respond to this request for information. We spoke with Dr. Gregory Downing's office, and focused our response on the type of model (centralized or federated) that we chose for our NHIN pilot.

With over 139,000 people in 48 countries, Accenture is committed to helping its clients succeed in attaining their mission and goals. Our Health and Life Science (HLS) practice has over 4,000 professionals and serves scores of academic medical centers, health plans and the pharmaceutical industry. Our US government health practice which serves the Departments of Veterans Affairs and Defense, as well as the Department of Health and Human Services, is committed to bring the best of Accenture to these agencies. Through our work with the Office of the National Coordinator for Health Information Technology (ONC), we have recently demonstrated how a prototype health information exchange could be used to promote the real-time collection of laboratory data from a variety of health care organizations and how this information could be forwarded to public health officials. A key aspect of this work was to demonstrate the feasibility of translating this information into Federal Health Architecture (FHA) standards which enables business intelligence and secondary use of the data.

Business Information

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Accenture recently completed a prototype for a Nationwide Health Information Network (NHIN) for the ONC. A fundamental tenant of this work was to demonstrate that data could be extracted from a variety of health care systems and that this data could be normalized to Federal Health Architecture (FHA) standards so that it could be used to populate a data warehouse with a data set that is semantically normalized.

Normalization of data is critical for enabling:

- Clinical decision support
- Public health surveillance systems
- Clinical research
- Consent management

Accenture chose to use a hybrid model for the NHIN Prototype, a combination of a centralized and a federated model. This approach was chosen for several reasons. First, there is tremendous disparity in information technology use in the stakeholder organizations, and sometimes it is not economically feasible for small to mid-size hospitals, independent physicians, and smaller group practices to implement the technology needed to tie into a centralized NHIN model. Other issues include the control of the data, privacy, the competitive nature of different stakeholders in sharing quality and performance data, and the wide variation in the "openness" of the available clinical information technology systems. Although there are challenges associated with accessing all the needed data in either model, we did find that a hybrid model worked well for our prototype. We would be happy to discuss these issues with Health and Human Services and have provided contact information in this document for Dr. Brian Kelly, Mr. Martin Renwick, and Mr. John Quinn if further discussion is desired.

In the NHIN Prototype, we were able to connect with a variety of source health care systems, extract data from these systems using a variety of techniques including HL7 messaging and flat file extractions and convert this data into a HL7 v3 message. The local data in these messages were then mapped to FHA terms.

The largest issues that will need to be addressed relate to the processes for interfacing with a wide variety of health care source systems and working with the owners of these systems to extract data and convert it to FHA standards. Our experience with the NHIN prototype demonstrates that this can be done, both from technical and human factors perspectives. However, our experience has also shown us how complex it is to map data from source systems and how critically dependent an integrator is on the local site personnel to validate and maintain these mappings. Incentives must be aligned to facilitate data sharing and institutions must be motivated to do so. Without full commitment from the local facilities to make this succeed and the dedication of resources to work and maintain the data mappings and interfaces, this program will not succeed. Additionally, there still exists significant concerns about data privacy, although the HIPAA exemptions regarding public health do simplify this somewhat.

Finally, while this concept and infrastructure has been demonstrated in a prototype setting, it needs to be fully tested in an operational setting with normal test loads to determine critical factors such as error message rates and how quickly these rates can be minimized. This is particularly important because one of our significant challenges during the NHIN prototypes was the lack of test systems (of any type) at the majority of our health care sites. This made testing more challenging and required us to develop alternative strategies for testing prior to connecting live to production systems, in addition to introducing a longer period of testing after we initially connected to provider production systems.

We designed our platform to sit along side existing legacy applications and be "minimally invasive" to local organizations and providers. In our model, we extract core sets of data from local systems. In the NHIN prototype, this was limited to a set of HL7 messages for demographics, laboratory, medications and transcription.

These messages were extracted either via HL7 messaging or flat files, converted into a HL7v3 message, and sent via an interface engine to our databases where they were mapped from local terms to FHA standard terms. In our model, at the distinct health care market level (a regional level in the prototype), a core set of patient data was aggregated which included demographic, medication, lab, allergy data, and diagnoses and procedures. This data was obtained either from the messages previously described or from direct entry from providers and patients. Additional data could also be obtained from other distinct health care markets using our messaging infrastructure and because all this data was normalized to a common data model (HL7 v3 RIM), it was used to populate a data warehouse from which standard business intelligence applications could be run to support bio-surveillance and other secondary use requirements.

Many challenges still exist and must be overcome before the real-time exchange of data from local hospital and health care systems and public health agencies will occur. Our experience with the NHIN prototypes showed that it is possible to put infrastructure in place to make this exchange a reality. We were able to connect to 15 different facilities in a

short period and make the exchanges work. However, this approach needs to be tested at scale with a group of health care organizations that are appropriately motivated and resourced. Success here is dependant on being able to deal with the most difficult issues facing the federal government for which is the data extraction and data normalization issues that are critical to driving the business intelligence and reporting capabilities it desires. We have worked with a large team of functional lab and medication experts, health care data terminology experts, technology partners and other provider organizations to demonstrate this can be done is a prototype setting. These skill sets and the appropriate incentives at the provider organization levels will be needed to make this important data sharing a reality.

Yours Sincerely,

Cathy McGrane

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